



# Mathematics

## Paper 3

### (Calculator)

## Foundation Tier

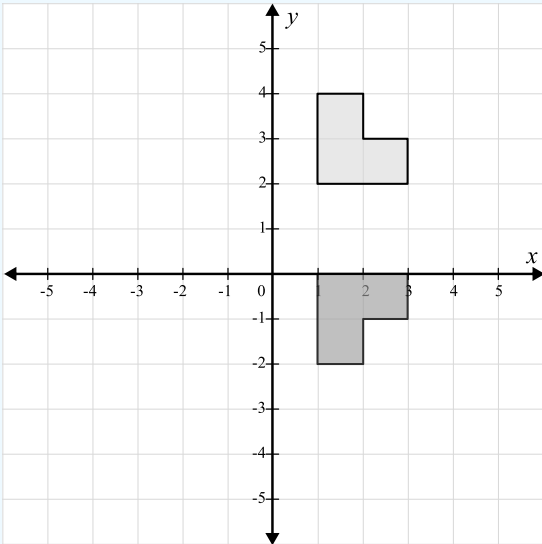
## Mark Scheme

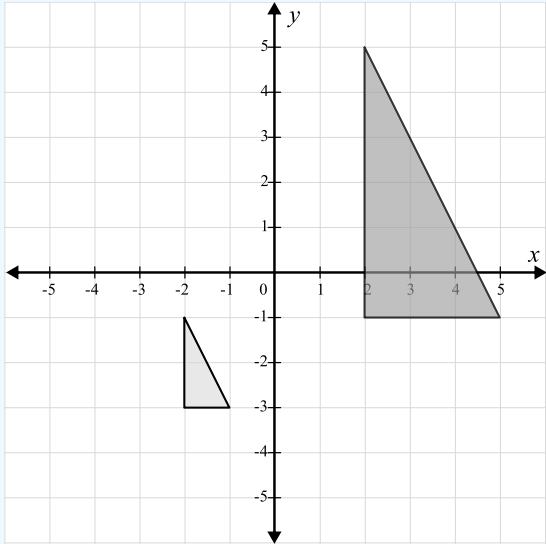
Edexcel GCSE

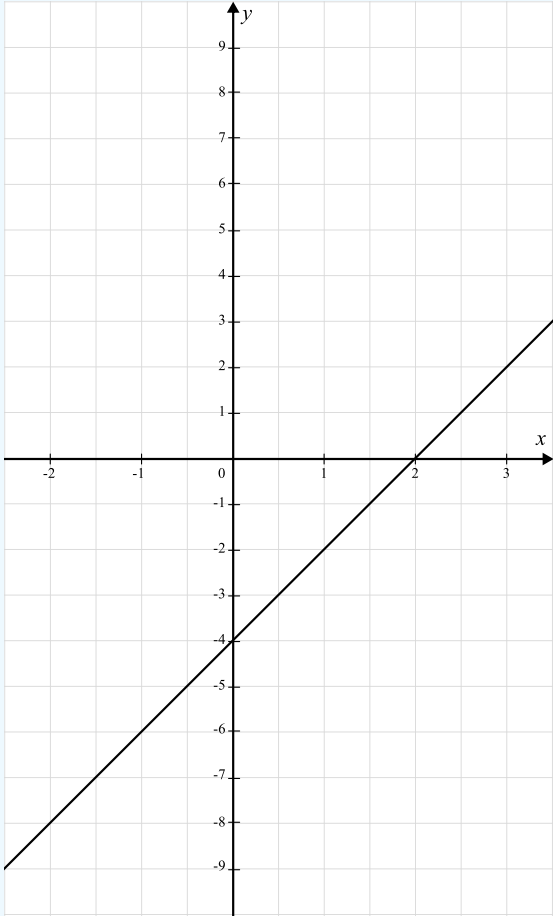
SET 5

Question	Working	Answer	Notes								
Q1		0.3 or 3 tenths									
Q2		Any 2 of 1, 3, 7 and 21									
Q3		0.62									
Q4		11.50am									
Q5a		25cm <sup>2</sup>									
Q5b	Perimeter = 24cm	Any rectangle with a perimeter of 24cm	M1 P = 24cm or $l + w = 12$ or $2l + 2w = 24$ A1 Any correct rectangle								
Q6	$5.2 \times 80 = 416$ $3.5 \times 80 = 280$	Length 416cm Width 280cm	M1 Correctly measures length or width A1 Multiplies their values by 80 A1 Width correct								
Q7	$4 \times 5 = 20$ apples required 4 packs required $4 \times 99p = \text{£}3.96$ 20 apples requires $20 \times 18 = \text{£}3.60$ Cheaper to buy individual apples	Individual apples	M1 20 apples required or $4 \times 5 = 20$ , $4 \times 99p = \text{£}3.96$ M1 $20 \times 18 = \text{£}3.60$ A1 Correct answer from correct working								
Q8a	<table><tr><td>Owls</td><td></td></tr><tr><td>Buzzards</td><td></td></tr><tr><td>Red kites</td><td></td></tr><tr><td>Ospreys</td><td></td></tr></table> <div>Key:  = 8 birds</div>	Owls		Buzzards		Red kites		Ospreys			B1 Correct for red kites
Owls											
Buzzards											
Red kites											
Ospreys											

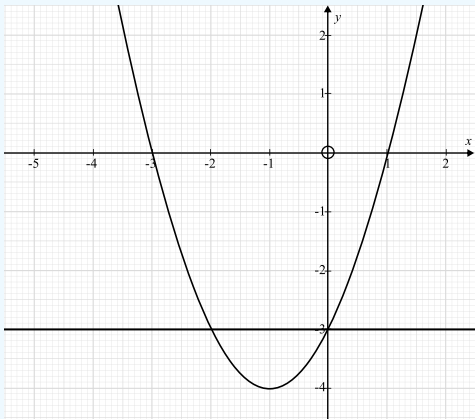
Question	Working	Answer	Notes
<b>Q8b</b>	$22:28 = 11:14$	11:14	M1 22 and 28 A1 Correct simplified ratio
<b>Q8c</b>	$\frac{10}{84} = \frac{5}{42}$	$\frac{10}{84}$	M1 10 or 84 seen A1 $\frac{10}{84}$ oe
<b>Q9</b>		Parallelogram	
<b>Q10a</b>		$\frac{2}{24}$ or any equivalent fraction	A1 Any equivalent fraction
<b>Q10b</b>	$\frac{1}{12} = \frac{2}{24}$ $\frac{2}{12} = \frac{4}{24}$	$\frac{3}{24}$	A1 Any fraction that is greater than $\frac{1}{12}$ and $\frac{2}{12}$
<b>Q11a</b>	Annie added 4 and $-3$ before squaring Rebecca calculated $-3$ squared as $-9$		
<b>Q11b</b>	$4 + (-3)^2 = 4 + 9 = 13$	13	B1 cao
<b>Q12a</b>	$12x - 8 = 52$ $12x = 60$ $x = 5$	$x = 5$	M1 Correctly expands brackets or divides by 4 A1 cao
<b>Q12b</b>	$4y + 1 = 22$ $4y = 21$ $y = 5.25$	$y = 5.25$	M1 Multiplies by 11 A1 cao

Question	Working	Answer	Notes
<b>Q13</b>	$24 \times 7 = 168$ $\frac{40}{84} = \frac{5}{21}$	$\frac{5}{21}$	M1 $24 \times 7 = 168$ A1 Correct, simplified fraction
<b>Q14</b>	$V = 6 \times 2 \times 3 = 36\text{cm}^3$	$36\text{cm}^3$	M1 $6 \times 2 \times 3$ A1 cao
<b>Q15</b>	12 pages per 20s = 36 pages per min $36 \times 8 = 288$ 11 pages per 15s = 44 pages per min $44 \times 10 = 440$ $288 + 440 = 728$	728	M1 12 pages per 20s = 36 pages per min M1 $36 \times 8 = 288$ M1 11 pages per 15s = 44 pages per min $44 \times 10 = 440$ A1 cao
<b>Q16a</b>			M1 Rotation $90^\circ$ A1 Fully correct

Question	Working	Answer	Notes
<b>Q16b</b>			<p>M1 Enlargement scale factor 3</p> <p>A1 Fully correct</p>
<b>Q17</b>	<p>2% of 125 000 = 2500</p> <p>5% of 80 000 = 4000</p> <p>Total stamp duty = 2500 + 4000 = £6500</p> <p>£330 000 + £6500 + £2000 = £338 500</p> <p>Yes he can afford it</p>	<p>Yes</p>	<p>M1 2% of 125 000 = 2500</p> <p>M1 5% of 80 000 = 4000</p> <p>M1 Total stamp duty = 2500 + 4000 = £6500</p> <p>A1 Correct conclusion from correct working</p>

Question	Working	Answer	Notes																
<div>Q18</div>	<table border="1"><tr><td>x</td><td>-2</td><td>-1</td><td>0</td><td>1</td><td>2</td><td>3</td><td>4</td></tr><tr><td>y</td><td>-8</td><td>-6</td><td>-4</td><td>-2</td><td>0</td><td>2</td><td>4</td></tr></table> 	x	-2	-1	0	1	2	3	4	y	-8	-6	-4	-2	0	2	4		<p>M1 At least 2 correct points plotted or stated or a line through (0, -4) or a line with gradient 2</p> <p>M1 A line through at least 3 correct points or all points plotted but not joined</p> <p>A1 cao</p>
x	-2	-1	0	1	2	3	4												
y	-8	-6	-4	-2	0	2	4												
<div>Q19a</div>	$\frac{16}{40} \times 220 = 88$	88	<p>M1 <math>\frac{16}{40}</math> seen</p> <p>A1 cao</p>																

Question	Working	Answer	Notes
Q19b		We have assumed that the sample is representative of all pupils	
Q20a		41° Corresponding angles are equal	A1 41° B1 Corresponding angles are equal
Q20b		No because angles <i>DCG</i> and <i>CGH</i> are co-interior so they add up to 180°	B1 No B1 Correct explanation
Q21a		$q^{12}$	
Q21b		$2p^7$	M1 2 or 7 correct A1 cao
Q21c	$4 \times 3 = 12$ $2^3 = 8$	$a = 4$ $b = 8$	B1 $a = 4$ B1 $b = 8$
Q22a	$1 - 0.7 = 0.3$	0.3	
Q22b	$200 \times 0.7 = 140$	140	
Q23a		$3.4 \times 10^{-5}$	
Q23b		27100	
Q23c	$\frac{3 \times 10^8}{4.5 \times 10^9} = \frac{3}{45} = \frac{1}{15}$	$\frac{1}{15}$	A1 Fully simplified fraction
Q24a	$5^2 + 8^2 = 89$ $\sqrt{89} = 9.433981132$	9.43cm	M1 $5^2 + 8^2 = 89$ A1 cao

Question	Working	Answer	Notes
<b>Q24b</b>	Area of semi circle: $\frac{1}{2} \times \pi \times \left(\frac{\sqrt{89}}{2}\right)^2$ $= \frac{1}{2} \times \pi \times 4.716(99\dots)^2$ $= 34.950(21827\dots)$ Area of triangle: $\frac{1}{2} \times 5 \times 8 = 20$ Shaded area: $34.950(21827\dots) - 20 = 14.950(21827\dots)$	$34.95\text{cm}^2$	M1 ft their radius in <b>(a)</b> = “9.433(981132...)” $\div 2$ M1 ft $\frac{1}{2} \times \pi \times$ their $r$ squared M1 $\frac{1}{2} \times 5 \times 8 = 20$ A1 cao
<b>Q25</b>	$\frac{3a + 5a + 2 + 2a + 8}{3} = 120$ $10a + 10 = 360$ $10 = 350$ $a = 35$ Smallest value: $2 \times 35 + 8 = 78$	78	M1 Sets up equation or multiplies 120 by 3 A1 $a = 35$ M1 Substitutes a into at least one expression A1 cao
<b>Q26</b>		>	
<b>Q27a</b>		$(-1, -4)$	
<b>Q27b</b>		$x = -2$ and $x = 0$	M1 Line drawn at $-3$ or indication of reading from graph at $y = -3$ A1 Both correct solutions



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